

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-20 (Canceled):

Claim 21 (New): A method of measuring an AC residual image in a display panel, comprising:

a first step of stabilize a display panel;

a second step of measuring a brightness $B_b(V_{sig})$ of the display panel, while a signal voltage V_{sig} applied thereto is increased;

a third step of driving the display panel for a predetermined period with a predetermined signal voltage V_{max} ,

a fourth step of measuring a brightness $B_a(V_{sig})$ of the display panel, while the signal voltage V_{sig} applied thereto is decreased; and

a fifth step of obtaining a value of AC residual image $\Delta B(V_{sig})$ by the following formula:

$$\Delta B(V_{sig}) (\%) = [B_a(V_{sig}) - B_b(V_{sig})] / B_b(V_{sig}).$$

Claim 22 (New): A method according to claim 21, wherein the display panel is driven by pure AC driving at the third step.

Claim 23 (New): A method according to claim 21, wherein the first and the third steps are conducted at 55°C.

Claim 24 (New): A method according to claim 22, wherein the first and the third steps are conducted at 55°C.

Claim 25 (New): A liquid crystal display device with an oriented film, in which the oriented film is selected through a method of measuring AC residual image which comprises:

a first step of stabilize a display panel;

a second step of measuring a brightness $B_b(V_{sig})$ of the display panel, while a signal voltage V_{sig} applied thereto is increased;

a third step of driving the display panel for a predetermined period with predetermined signal voltage V_{max} ;

a fourth step of measuring a brightness $B_a(V_{sig})$ of the display panel, while a signal voltage V_{sig} applied thereto is decreased; and

a fifth step of obtaining a value of the AC residual image by the following formula:

$$\Delta B(V_{sig}) (\%) = [B_a(V_{sig}) - B_b(V_{sig})] / B_b(V_{sig}).$$

Claim 26 (New): A liquid crystal display device according to claim 25, wherein the display panel is driven by pure AC driving at the third step.

Claim 27 (New): A liquid crystal display device according to claim 25, wherein the first and the third steps are conducted at 55°C.

Claim 28 (New): A liquid crystal display device according to claim 26, wherein the first and the third steps are conducted at 55°C.

Claim 29 (New): A liquid crystal display device according to claim 25, wherein the oriented film selected has an AC residual image value less than 8%.

Claim 30 (New): A liquid crystal display device according to claim 26, wherein the oriented film selected has an AC residual image value less than 8%.

Claim 31 (New): A liquid crystal display device according to claim 28, wherein the oriented film selected has an AC residual image value less than 8%.

Claim 32 (New): A display device in which an AC residual image $\Delta B (V_{sig})$ measured by a following method is less than 8%, wherein the method comprises:

- a first step of stabilize a display panel;
- a second step of measuring a brightness $B_b (V_{sig})$ of the display panel, while a signal voltage V_{sig} applied thereto is increased;
- a third step of driving the display panel for 30 minutes with a predetermined signal voltage V_{max} ;
- a fourth step of measuring a brightness $B_a (V_{sig})$ of the display panel, while a signal voltage V_{sig} applied thereto is decreased; and
- a fifth step of obtaining a value of the AC residual image by the following formula:

$$\Delta B (V_{sig}) (\%) = [B_a (V_{sig}) - B_b (V_{sig})] / B_b (V_{sig}).$$

Claim 33 (New): A display device according to claim 32, wherein the display panel is driven by pure AC driving at the third step.

Claim 34 (New): A display device according to claim 32, wherein the first and the third steps are conducted at 55°C.

Claim 35 (New): A display device according to claim 33, wherein the first and the third steps are conducted at 55°C.

Claim 36 (New): A liquid crystal display device with an oriented film, where an AC residual image $\Delta B (V_{sig})$ measured by a following method is less than 8%, wherein the method comprises:

a first step of stabilize a display panel;

a second step of measuring a brightness $B_b (V_{sig})$ of the display panel, while a signal voltage V_{sig} applied thereto is increased;

a third step of driving the display panel for 30 minutes with a predetermined signal voltage V_{max} ;

a fourth step of measuring a brightness $B_a (V_{sig})$ of the display panel, while a signal voltage V_{sig} applied thereto is decreased; and

a fifth step of obtaining a value of the AC residual image by the following formula:

$$\Delta B (V_{sig}) (\%) = [B_a (V_{sig}) - B_b (V_{sig})] / B_b (V_{sig}).$$

Claim 37 (New): A liquid crystal display device according to claim 36, wherein the display panel is driven by pure AC driving at the third step.

Claim 38 (New): A liquid crystal display device according to claim 36, wherein the first and the third steps are conducted at 55°C.

Claim 39 (New): A method of measuring an AC residual image in a display panel, comprising:

a first step of stabilize a display panel;

a second step of measuring a brightness $B_b(V_{sig})$ of the display panel at many signal voltages V_{sig} ;

a third step of driving the display panel for a predetermined period with a predetermined signal voltage V_{max} ;

a fourth step of measuring a brightness $B_a(V_{sig})$ of the display panel at many signal voltages V_{sig} ; and

a fifth step of obtaining a value of the AC residual image by the following formula:

$$\Delta B(V_{sig}) (\%) = [B_a(V_{sig}) - B_b(V_{sig})] / B_b(V_{sig}).$$

Claim 40 (New): A method according to claim 39, wherein the display panel is driven by pure AC driving at the third step.

Claim 41 (New): A method according to claim 39, wherein the first and the third steps are conducted at 55°C.

Claim 42 (New): A method according to claim 40, wherein the first and the third steps are conducted at 55°C.

Claim 43 (New): A liquid crystal display device with an oriented film, wherein the oriented film is selected through a following method of measuring an AC residual image, comprising:

a first step of stabilize a display panel;

a second step of measuring a brightness $B_b(V_{sig})$ of the display panel at many signal voltages V_{sig} ;

a third step of driving the display panel for a predetermined period with a predetermined signal voltage V_{max} ;

a fourth step of measuring a brightness of $B_a(V_{sig})$ of the display panel at many signal voltages V_{sig} ;

a fifth step of obtaining a value of the AC residual image by the following formula:

$$\Delta B(V_{sig}) (\%) = [B_a(V_{sig}) - B_b(V_{sig})] / B_b(V_{sig}).$$

Claim 44 (New): A liquid crystal display device according to claim 43, wherein the display panel is driven by pure AC driving at the third step.

Claim 45 (New): A liquid crystal display device according to claim 43, wherein the first and the third steps are conducted at 55°C.

Claim 46 (New): A liquid crystal display device according to claim 44, wherein the first and the third steps are conducted at 55°C.

Claim 47 (New): A liquid crystal display device according to claim 43, wherein the oriented film selected has an AC residual image value less than 8%.

Claim 48 (New): A liquid crystal display device according to claim 44, wherein the oriented film selected has an AC residual image value less than 8%.

Claim 49 (New): A liquid crystal display device according to claim 46, wherein the oriented film selected has an AC residual image value less than 8%.

Claim 50 (New): A display device of an AC residual image $\Delta B (V_{sig})$ measured by a following method is less than 8%, wherein the method comprises:

a first step of stabilize a display panel;

a second step of measuring a brightness $B_b (V_{sig})$ of the display panel at many signal voltages V_{sig} ;

a third step of driving the display panel for 30 minutes with a predetermined signal voltage V_{max} ;

a fourth step of measuring a brightness $B_a (V_{sig})$ of the display panel at many signal voltages V_{sig} ; and

a fifth step of obtaining a value of the AC residual image by the following formula:

$$\Delta B (V_{sig}) (\%) = [B_a (V_{sig}) - B_b (V_{sig})] / B_b (V_{sig}).$$

Claim 51 (New): A display device according to claim 50, wherein the display panel is driven by pure AC driving at the third step.

Claim 52 (New): A display device according to claim 50, wherein the first and the third steps are conducted at 55°C.

Claim 53 (New): A display device according to claim 51, wherein the first and the third steps are conducted at 55°C.

Claim 54 (New): A liquid crystal display device with an oriented film, wherein an AC residual image $\Delta B (V_{sig})$ measured by a following method is less than 8%, wherein the method comprises:

a first step of stabilize a display panel;

a second step of measuring a brightness $B_b (V_{sig})$ of the display panel at many signal voltages V_{sig} ;

a third step of driving the display panel for 30 minutes with a predetermined signal voltage V_{max} ;

a fourth step of measuring a brightness $B_a (V_{sig})$ of the display panel at many signal voltages V_{sig} ; and

a fifth step of obtaining a value of the AC residual image by the following formula:

$$\Delta B (V_{sig}) (\%) = [B_a (V_{sig}) - B_b (V_{sig})] / B_b (V_{sig}).$$

Claim 55 (New): A liquid crystal display device according to claim 54,
wherein the display panel is driven by pure AC driving at the third step.

Claim 56 (New): A liquid crystal display device according to claim 55,
wherein the first and the third steps are conducted at 55°C.